

REMARKS

Claims 1-22 are pending in this application. By this Amendment, claims 1, 2, 3, 10, 13, and 19 have been amended and claim 22 added.

Applicant appreciates the courtesy shown to Applicant's representative by Examiner Huffman in the January 17, 2006, telephone interview that entry be confirmed by the request in the attached Request for Continued Examination. Applicant's separate record of the substance of the interview is incorporated into the above remarks.

As discussed during the telephone interview, the Amendment After Final Rejection filed December 15, 2005, has been entered. Accordingly, the amendments to the claims found herein are based on the claims as presented in the December 15 Amendment After Final Rejection.

Applicant appreciates the allowance of claims 11 and 12 in paragraph 4, on page 6 of the Office Action. Applicant also appreciates the indication of allowability of claims 4, 7-9 and 15-18. With respect to claims 15-18, as discussed in the December 15 Amendment After Final Rejection, the amendment to claim 15 overcomes the objection. Thus, claims 15-18 are in condition for allowance. With respect to claims 4 and 7-9, Applicant respectfully submits that all of the claims 1-22 are allowable for the reasons discussed below.

In paragraph 3, on page 2 of the Office Action, claims 1-3, 5, 6, 10, 13, 14, and 19-21 were rejected under 35 U.S.C. §102(e) over Takahashi et al. (hereinafter "Takahashi"), U.S. Patent No. 6,454,390 B1. The rejection is respectfully traversed.

Applicant's invention of claim 1 calls for an ink jet printer, comprising a printing unit having a carriage and a print head in which a plurality of ink jet nozzles are arranged in plural columns, the printing unit printing on a printing medium while reciprocating the print head by the carriage for go-printing and return-printing; a sensor disposed on the carriage and having a light-emitting portion for emitting light toward the printing medium and a light-receiving

portion for receiving reflected light from the printing medium; a test pattern printing control unit that causes the printing unit to print a test pattern in which vertical ruled lines are arranged with a prescribed pitch; a plural patterns printing instructing unit that causes the printing unit to print a plurality of test patterns while changing a test pattern printing interval of the return-printing with respect to the go-printing in plural stages; a best pattern detecting unit for scanning-in the printed test patterns with the sensor and for automatically selecting a best test pattern from the scanned-in test patterns; and a best pattern printing instructing unit that causes the printing unit to print information indicating an image of the selected best test pattern on the printing medium. Takahashi fails to disclose these features.

Applicant's invention of claim 10 calls for an ink jet printer, comprising a printing unit having a carriage and a print head in which a plurality of ink jet nozzles are arranged in plural columns, the printing unit printing on a printing medium while reciprocating the print head by the carriage for go-printing and return-printing; a sensor disposed on the carriage and having a light-emitting portion for emitting light toward the printing medium and a light-receiving portion for receiving reflection light; a plural patterns printing instructing unit that causes the printing unit to print a plurality of test patterns in each of which vertical ruled lines are arranged with a prescribed pitch, while changing a test pattern printing interval of the return-printing with respect to the go-printing in plural stages; a best pattern detecting unit for scanning-in the printed test patterns with the sensor and for automatically selecting a best test pattern from the scanned-in test patterns; and a best pattern printing instructing unit that causes the printing unit to print information indicating an image of the selected best test pattern on the printing medium. Takahashi fails to disclose these features.

Applicant's invention of claim 19 calls for an ink jet printer, comprising a printing unit having a carriage and a print head in which a plurality of ink jet nozzles are arranged in plural columns, the print unit printing on a printing medium while reciprocating the print head by the

carriage for go-printing and return-printing; a sensor disposed on the carriage and having a light-emitting portion for emitting light toward the printing medium and a light-receiving portion for receiving reflected light from the printing medium; a test pattern printing control unit that causes the printing unit to print a test pattern in which vertical ruled lines are arranged with a prescribed pitch; a plural patterns printing instructing unit that causes the printing unit to print a plurality of test patterns while changing a test pattern printing interval of the return-printing with respect to the go-printing in plural stages; and a best pattern detecting unit for scanning-in the printed test patterns with the sensor and for automatically selecting a best test pattern from the scanned-in test patterns; wherein each test pattern has a plurality of first regions and a plurality of second regions, each first region having both a plurality of dots that is printed by go-printing and a plurality of dots that is printed by return-printing, each second region having only a plurality of dots that is printed by one of go-printing and return-printing, a number of the sum of the dots per unit area of the first region being equal to a number of dots per unit area of the second region. Takahashi fails to disclose these features.

In Takahashi, the confirmation pattern is printed in order that a user can confirm the success in the dot alignment (col. 41, lines 45-46). As Takahashi describes, "A ruler mark pattern, etc. easy to be recognized by the user is used for the confirmation pattern, and bi-directional printing is performed by using an adjusting value acquired by the coarse adjustment and fine adjustment" (col. 41, lines 46-50). In other words, the printing patterns of two types of an adjustment pattern measuring density for adjusting and a confirmation pattern for confirming an adjustment are formed on the printing medium (col. 41, lines 50-54). However, this is simply the printing of a confirmation pattern and is not the printing of information indicating an image of the selected best test pattern.

In other words, Takahashi prints three printing patterns and two of the three printing patterns are for adjusting while the third is a confirmation pattern, which confirms a success in

the dot alignment (col. 41, lines 45-54). Takahashi's printing unit does not print information indicating an image of the selected best test pattern, but instead, prints three printing patterns. The user must confirm which pattern is the best pattern made by the adjustment using a confirmation pattern. The two additional print patterns are only test patterns that have been set automatically through a series of automatic dot alignment sequences controlled by an algorithm (col. 41, lines 59-67). It is the user that has to confirm the success of the dot alignment (col. 41, lines 45-46).

In the Advisory Action dated January 3, 2006, it is alleged that Applicant's claim language "information indicating the selected best test pattern" is broad and for this reason Takahashi allegedly discloses this feature. The Examiner is respectfully reminded that the broadest reasonable interpretation of the claims must also be consistent with the interpretation that those skilled in the art would reach (see MPEP § 2111) and with the specification. Those skilled in the art would reach that Applicant's best pattern instructing unit causes the printing unit to print information indicating an image of the selected best test pattern on the printing medium, and not just printing a pattern using adjustment values determined during coarse and fine adjustment as is alleged Takahashi teaches in the Advisory Action.

Accordingly, Takahashi fails to disclose a best pattern printing instructing unit that causes the printing unit to print information indicating an image of the selected best test pattern on the print medium, as recited in claims 1 and 10.

Applicant's ink jet printer, on the other hand, includes a best pattern printing instruction unit that causes the printing unit to print information indicating an image of the selected best test pattern on the print medium. By printing the information indicating the image of the best test pattern on the printing medium on which respective test patterns have printed, the user can easily confirm the printing condition as well as the process of the automatic adjustment. This is just one of the advantages, for example, of Applicant's ink jet printer. Another advantage, for

example, of Applicant's ink jet printer, is that in the case where the adjustment has been mistakenly done, the user can confirm which test pattern has been falsely selected as the best test pattern. Thus, identification of the failure caused is facilitated. Additionally, the manufacturer, for example, can swiftly provide the support service economically by obtaining the printing medium and analyzing it. Takahashi fails to disclose these advantages.

Takahashi also fails to disclose that each test pattern has a plurality of first regions and a plurality of second regions, each first region having both a plurality of dots that is printed by go-printing and a plurality of dots that is printed by return-printing, each second region having only a plurality of dots that is printed by one of go-printing and return-printing, a number of the sum of the dots per unit area of the first region being equal to a number of dots per unit area of the second region, as recited in claim 19.

In Takahashi, each test pattern does not include a plurality of first regions and a plurality of second regions (Figs. 37A and 37E) that correspond to Applicants plurality of first regions and a plurality of second regions as recited claim 19. Figs. 37A-37C show a pattern of a patch for use in the coarse adjustment (col. 39, lines 5-6). As Takahashi states, "A reference dot is formed by a printing in a forward scan, and offset dots in which printing is performed, changing registration conditions, are formed by a reverse scan" (col. 39, lines 6-9). In the case where printing is performed in a non-adjustment, an offsetting or shifting amount is defined as 0 dot (col. 39, lines 9-11). The offsets caused when printing is performed in this state (Fig. 37C) are caused by depositing position precision of the printing apparatus and the print head, and are generated due to variations, etc. upon the respective manufacturing (col. 39, lines 11-15).

Nowhere does Takahashi disclose that each test pattern has a plurality of first regions and a plurality of second regions, that each second region has only a plurality of dots that is printed by one of go-printing and return-printing, and that a number of the sum of the dots per unit area of the first region is equal to a number of dots per unit area of the second region.

Further, in reply to the Advisory Action, it is respectfully submitted that the Office Action has misinterpreted the disclosure of Takahashi with respect to the first and second regions. In particular, the Office Action defines the first region of Takahashi as consisting of the first row of dots as shown on the left side of Fig. 37A. But, the Office Action has defined the second region of Takahashi as consisting of the two rows of dots as shown on the right side of Fig. 37A, and not the first row of dots as defined for the first region. Accordingly, the Office Action has not been consistent in defining what constitutes a first region and a second region of Takahashi. Thus, the Office Action has improperly piecemealed only parts of each test pattern in Figs. 37A and 37E of Takahashi in order to allege that Takahashi discloses a plurality of first region and second region.

But, for at least the reasons discussed above, Takahashi fails to disclose that each test pattern has a plurality of first regions and a plurality of second regions as recited in claim 19.

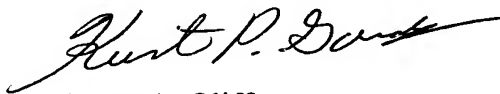
Thus, Takahashi does not literally disclose each and every feature of Applicant's claimed invention as recited in claims 1, 10, and 19 and the rejection under 35 U.S.C. §102 is inappropriate. Further, for the reasons discussed, Takahashi does not suggest the features as recited in claims 1, 10, and 19.

Because, Takahashi does not anticipate or suggest the recited features of claims 1, 10 and 19, Takahashi cannot possibly anticipate or suggest the subject matter of claims 2, 3, 5, 6, 13, and 14, which depend from claim 1, and the subject matter of claims 20 and 21, which depend from claim 19 for the reasons discussed with respect to claims 1 and 19 and for the additional features recited therein. It is respectfully requested that the rejection be withdrawn.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-3, 5, 6, 10, 13, 14 and 19-21, in addition to already allowed claims 11 and 12 and allowable claims 4, 7-9, and 15-18, are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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Attachments:

Request for Continued Examination
Petition for Extension of Time
Amendment Transmittal

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